

REMARKS

Claims 1-3, 5, 7, and 10-15 are currently pending. The Examiner has rejected claims 1-3, 5, 7, and 10 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,580,374 to Okumura et al.¹ The Examiner has also rejected claims 11-15 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,580,374 to Okumura et al. The following remarks are considered by Applicants to overcome each of the Examiner's outstanding rejections. An early Notice of Allowance is therefore requested.

I. Summary of Relevant Law

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The determination of obviousness rests on whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. In determining obviousness, four factors should be weighed: (1) the scope and content of the prior art, (2) the differences between the art and the claims at issue, (3) the level of ordinary skill in the art, and (4) whatever objective evidence may be present. Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor. The Examiner carries the burden under 35 U.S.C. § 103 to establish a prima facie case of obviousness and must show that the references relied on teach or suggest all of the limitations of the claims.

II. REJECTION OF CLAIMS 1-3, 5, AND 7 UNDER 35 U.S.C. § 102(B) BASED ON OKUMURA ET AL

With respect to this rejection, the Examiner contends that:

¹ While examiner has not specifically rejected Claim 10, as Claim 10 claims "An ink cartridge comprising the ink for ink-jet recording as defined in claim 1," Applicants will assume for purposes of this rejection under 35 U.S.C. § 102(b) that Examiner meant to include Claim 10 in his rejection to Claim 1.

“Okumura et al teach an aqueous ink composition comprising 2,5-dimercapto-1,3,4-thiadiazole or its salt, a colorant, water and a water-soluble organic solvent (abstract and col. 1 lines 53-55). The reference further teaches that the colorant may be a pigment (col. 1 lines 63-66 and col. 2 lines 1-7). The water-soluble organic solvent includes polyethylene glycol and diglycerol (col. 2 lines 50+). **It is the position of the Examiner that similar compositions with similar amounts would provide clear and convincing evidence that would lead one to conclude that the solid matter can be redissolved in the ink would be the same as claimed by applicant.** The composition as taught by Okumura et al appears to anticipate the claimed invention.”

Office Action (10/24/05), P. 2 (emphasis added). However, this misconstrues the teachings of Okumura et al. Specifically, as is described in detail below, Okumura never teaches a composition “wherein the ink is solidified into a solid matter when the water contained in the ink is evaporated, and the solid matter is redissolved in the ink which is not solidified.” Application, P. 2, Claim 1. As such Applicants respectfully asserts that the Examiner’s rejection stands in error.

Claim 1

Claim 1 of the current application requires:

An ink for ink-jet recording comprising:

a pigment;

water; and

diglycerol;

wherein the ink is solidified into a solid matter when the water contained in the ink is evaporated, and the solid matter is redissolved in the ink which is not solidified.

8/4/05 Response to 4/19/05 Office Action, P. 2 (emphasis added).

Okumura et al, however, never discloses an ink “wherein the ink is solidified into a solid matter when the water contained in the ink is evaporated, and the solid matter is redissolved in the ink which is not solidified.” As disclosed in the Specification of the current Application, this limitation can be controlled by the amounts of the different components of the ink and their ratios to one another. Application, P.4, ¶ [0007]; P. 10, ¶ [0018]. For example, problems arise in redissolving the ink when the total mount of water-soluble

organic solvent contains too small a percentage of polyethylene glycerol or diglycerol. *Id.* Furthermore, the ink solidification is effected when the ink contains too much polyethylene glycol or diglycerol as compared to the pigment. *Id.* Therefore, it is not inherent that every ink composition that contains a pigment, water, and diglycerol will satisfy the above limitation.

For Okumura et al to anticipate Claim 1 of the current Application, Okumura et al must disclose an ink that satisfies all the limitations of Claim 1. However, Okumura et al never discloses any example which contains diglycerol and satisfies the above limitation either explicitly or inherently. In fact, the above limitation is never disclosed in Okumura et al at all. Okumura only discloses that the use of a solvent “can improve the nondrying properties of the ink.” Okumura et al, Col. 3, Lns. 5-9. As such, Okumura et al does not contain each and every element as set forth in Claim 1. Therefore, Applicants respectfully assert that Examiner has failed to establish a prima facie case of anticipation of independent Claim 1 and corresponding claims 2, 3, 5, 7, and 10 because they are dependant from Claim 1. Therefore, Applicants respectfully request that Examiner remove the rejection of claims 1-3, 5, 7, and 10 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,580,374 to Okumura et al.

Claim 3

Claim 3 is dependent upon Claim 1. As Claim 1 is allowable, so must be Claim 3. In addition, Claim 3 specifies that the “weight ratio of the diglycerol with respect to the pigment is not more than 3.” 8/4/05 Response to 4/19/05 Office Action, P. 2. Okumura et al never discloses any relation between the amount of diglycerol in the ink and the amount of pigment in the ink, nor does it disclose any example that satisfies this claim limitation. It is therefore respectfully requested that Examiner remove the rejection of Claim 3 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,580,374 to Okumura et al.

Claim 7

Claim 7 is dependent upon Claim 3, which is dependant upon Claim 1. As Claim 3 is allowable, so must be Claim 7. In addition, Claim 7 specifies that the “diglycerol is contained by not less than 50% by weight with respect to the total amount of the water-soluble organic solvent including the diglycerol.” 8/4/05 Response to 4/19/05 Office Action, P. 2. Okumura et al never discloses any relation between the amount of diglycerol in the ink and the amount of any other water-soluble organic solvent contained in the ink, nor does it disclose any example that satisfies this claim limitation. It is therefore respectfully requested that Examiner remove the rejection of Claim 7 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,580,374 to Okumura et al.

III. REJECTION OF CLAIMS 11-15 UNDER 35 U.S.C. § 103(A) BASED ON OKUMURA ET AL

With respect to this rejection, the Examiner contends that:

“[I]t would have been obvious to one of ordinary skill in the art to use the combination of polyethylene glycol and diglycerol as claimed by applicant as Okumura et al also discloses the use of polyethylene glycol and diglycerol but shows no example incorporating them.

It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose ... [T]he idea of combining them flows logically from their having been individually taught in the prior art. In re Kerkhoven, 626 F. 2d 846, 850, 250 USPQ 1 069: 1072 (CCPA 1980). See MPEP 2144.06.”

Office Action (10/24/05), P. 3 (emphasis added). However, this misconstrues the teachings of Okumura et al, because Okumura et al does not disclose the use of polyethylene glycol and diglycerol for the same purposes as disclosed in the current Application.

As discussed above, Okumura only discloses that the use of a solvent “can improve the nondrying properties of the ink.” Okumura et al, Col. 3, Lns. 5-9. However, water-soluble organic solvents may be used for two additional purposes as well: (1) To improve the resolubility of the water base pigment ink; (2) To quicken the drying speed on

the paper surface. Application, P. 8, ¶ [0015]; P. 10, ¶ [0017]. Polyethylene glycol and diglycerol are specifically described in the Specification of the current Application as being able to improve the resolubility of the water base pigment ink. *Id.* Therefore, while Okumura et al may have disclosed the use of both polyethylene glycol and diglycerol for the same purpose (i.e. improving ink's nondrying properties), it does not follow that the two compounds are combined for that same purpose in the current Application. In fact, there is no teaching in Okumura et al to use either compound to improve the resolubility of the water base pigment ink, let alone a teaching to combine the two compounds for that purpose.

As such, Applicants respectfully assert that Examiner has failed to establish a prima facie case of obviousness of independent Claim 11 and corresponding claims 12-15 because they are dependant from Claim 11. Therefore, Applicants respectfully request that Examiner remove the rejection of claims 11-15 under 35 U.S.C. § 103(a) as being unpatentable over Okumura et al.

Claim12

Claim 12 is dependent upon Claim 11. As Claim 11 is allowable, so must be Claim 12. In addition, Claim 12 specifies that the "weight ratio of the polyethylene glycol and the diglycerol with respect to the pigment is not more than 3." 8/4/05 Response to 4/19/05 Office Action, P. 3. Okumura et al never discloses any relation between (1) the amount of polyethylene glycol and diglycerol in the ink and (2) the amount of pigment in the ink, nor does it disclose any example that satisfies this claim limitation. It is therefore respectfully requested that Examiner remove the rejection of Claim 3 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,580,374 to Okumura et al.

Claim 13

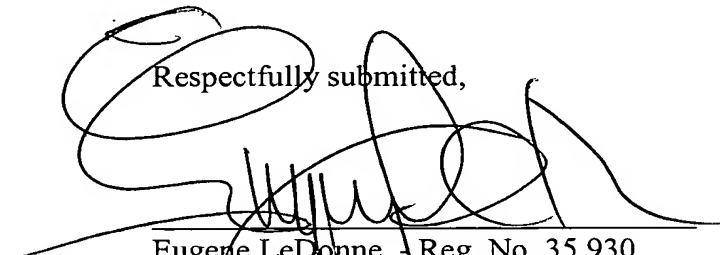
Claim 13 is dependent upon Claim 11. As Claim 11 is allowable, so must be Claim 13. In addition, Claim 13 specifies that the "ink is solidified into a solid matter when

the water contained in the ink is evaporated, and the solid matter is redissolved in the ink which is not solidified.” 8/4/05 Response to 4/19/05 Office Action, P. 3. As discussed above, Okumura et al never discloses any example which contains diglycerol, let alone polyethylene glycol and diglycerol, and satisfies the above limitation either explicitly or inherently. In fact, the above limitation is never disclosed in Okumura et al at all. It is therefore respectfully requested that Examiner remove the rejection of Claim 3 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,580,374 to Okumura et al.

Based upon the above remarks, Applicant respectfully requests reconsideration of this application and its early allowance. Should the Examiner feel that a telephone conference with Applicant's attorney would expedite the prosecution of this application, the Examiner is urged to contact him at the number indicated below.

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Respectfully submitted,


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